

RELATIONS AMONG SCHOOL ASSETS, INDIVIDUAL RESILIENCE, AND STUDENT ENGAGEMENT FOR YOUTH GROUPED BY LEVEL OF FAMILY FUNCTIONING

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Given the importance of student engagement for healthy outcomes, research needs to investigate whether school-based assets promote student engagement beyond individual and family influences. Unfortunately, such research has been limited by a lack of valid instrumentation. After examining the psychometrics of the California Healthy Kids Survey Resilience Youth Development Module, we used this risk and resilience instrument with a randomly selected sample of 10,000 diverse 7th-, 9th-, and 11th-grade students to test a model of relations between school assets, individual resilience, and student engagement for students grouped by level of family assets. Although youth in the low family asset group reported lower student engagement, contrary to hypothesis, multigroup structural equation modeling revealed that school assets did not have a differential relation for low family asset youth compared to their high family asset peers. School assets were associated with student engagement for all groups, even accounting for individual resilience. Implications and future directions are provided. © 2008 Wiley Periodicals, Inc.

There has been recent interest in exploring factors related to student engagement due to increasing recognition that it is crucial to engage students for high levels of academic performance (e.g., Blum & Libbey, 2004; Klem & Connell, 2004) and to avoid negative outcomes such as delinquency, substance use, dropout, and teen pregnancy (Bond et al., 2007; Finn & Rock, 1997; O'Farrell & Morrison, 2003; Shochet, Dadds, Ham, & Montague, 2006). Student engagement predicts school completion for students with and without disabilities above and beyond the impacts of socioeconomic status, achievement test scores, and grade retention status (Reschly & Christenson, 2006). Student engagement is related to academic success after controlling for family and personal factors (Finn & Rock, 1997). Moreover, school connectedness early in secondary school predicts better outcomes in adulthood (Bond et al., 2007). Because research has documented the important influence of student engagement on numerous developmental outcomes, future studies need to continue to advance the field by examining what alterable factors influence student engagement as an outcome (Finn & Rock, 1997).

Student engagement¹ is a construct that has been used synonymously with terms such as school engagement, bonding, attachment, connectedness, involvement, and commitment (O'Farrell & Morrison, 2003). Researchers are not always clear in distinguishing terms from each other; however, there is consensus that student engagement is a multidimensional construct consisting of two to four dimensions of internal thoughts and/or feelings as well as external behaviors (Finn, 1989; Fredericks, Blumenfeld, & Paris, 2004; Jimerson, Campos, & Greif, 2003). In the most comprehensive definition, student engagement is defined as a multidimensional construct with two observable factors of academic (e.g., grades) and behavioral (e.g., attendance) engagement and two internal factors of cognitive (e.g., thinking) and psychological engagement (e.g., feelings;

¹Student engagement is used in this article and throughout this special issue to represent a metaconstruct that combines separate areas of related research, including connectedness, engagement, and bonding with school (Fredericks, Blumenfeld, & Paris, 2004). The term *student engagement* was selected to represent a comprehensive, multidimensional construct that focuses on the relationship of student to school and promotes consideration of numerous influences on students that impact this relationship, such as home, peer, and community factors (Appleton, Christenson, & Furlong, this issue). When we cite previous research, we note how student engagement was measured for specificity.

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Sinclair, Christenson, Lehr, & Anderson, 2003). Schools are naturally oriented toward increasing the academic, behavioral, and cognitive levels of student engagement through individual classroom behavior management and various curricular strategies. However, schools also need to attend to psychological engagement in terms of relationship building, school spirit, activity involvement, school climate, and school safety in order to promote a variety of positive outcomes.

Whereas schools have limited access to family and personal factors, schools can impact alterable factors within the school environment that may increase student engagement (Christenson, Sinclair, Lehr, & Hurley, 2000). Thus, for school-based intervention efforts, it is important that studies investigate relationships between factors influencing student engagement (Maddox & Prinz, 2003) to understand whether school-based assets have an impact on student engagement above and beyond the important influence of family and individual factors. Toward this end, we investigated a model to explain the relationship between school assets, internal resilience, and student engagement for students at high and low risk for disengagement based on level of family support and relationship quality.

BUILDING A MODEL: THEORETICAL ORIENTATION

Developmental psychopathology and, in particular, concepts of risk and resilience, as well as the transactional-ecological nature of influences on development, explain the interrelationships between various influences on youth development. Developmental psychopathology attends to the complicated interactions within an individual's environment that dynamically impact a particular outcome across time (Sameroff, 2000). Social learning theories posit that the earliest and most salient influence on children is the home environment because family management skills, discipline techniques, and monitoring strategies are crucial factors impacting youth development (Patterson, Reid, & Dishion, 1992). Transactional-ecological theories propose that environmental influences from birth interact with genetic predisposition to cause patterns of behavior that are reinforced in subsequent interactions (Sameroff, 2000). Interactions with teachers, peers, and other environmental influences often reinforce developmental pathways (Patterson et al., 1992), but can also have the power to change a pathway through what have been called *turning points*. Turning points in a person's life alter a pathway of development from a negative to a positive trajectory (Sampson & Laub, 1993). Resilience represents successful adaptation in the face of adversity (Masten et al., 1999), and the process of adaptation is influenced by numerous factors and their transactions in a person's environment (Sameroff, 2000). Taken together, these theories highlight that although it is important to recognize the powerful influence of families and individual factors on youth development, it is also important to understand whether alterable factors, such as assets within the school environment, can act as turning points in youths' lives to help them achieve positive outcomes despite risk.

For schools, external assets such as relationships with teachers and opportunities to participate are possible promotive factors or buffers; however, research in this area is lacking. A risk factor is any influence in a youth's life that increases the probability of a negative outcome. In contrast, a protective factor is any influence that decreases the probability of a negative outcome (Kirby & Fraser, 1997). A "buffer" is a factor that is only associated with a positive outcome in the presence of risk (Gore & Eckenrode, 1994), whereas asset, resource, or promotive factors promote positive developmental outcomes and decrease negative developmental outcomes regardless of adversity or risk (Leffert et al., 1998; Sameroff & Fiese, 2000). When considering influences on positive outcomes, it is important to understand whether factors have a positive influence regardless of level of risk (i.e., promotive) or if they are only influential in the presence of risk (i.e., buffer). Thus, we tested the relevance of our model for a random sample as well as groups with higher than average and lower than average levels of family assets.

FAMILY FACTORS AS A RISK FACTOR

Research has demonstrated that parenting behaviors and family relationships are strongly related to student engagement, which appears to be a consistent finding across ethnic and socioeconomic groups (Wentzel, 1998). In terms of parenting behaviors, the authoritative parenting style is positively related to multiple dimensions of student engagement (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Steinberg, Lamborn, Dornbusch, & Darling, 1992). Longitudinal research demonstrates that authoritative parenting leads to student engagement, as indicated by improvements in school engagement (i.e., classroom engagement, school orientation, bonding to teachers, school conduct) over a 1-year period in children with authoritative parents compared to children with nonauthoritative parents ($p < .001$; Steinberg et al., 1992). Thus, parents who combine high levels of acceptance, supervision, consistent discipline, and democracy promote student engagement compared to those who do not exhibit these parenting behaviors. Specific components of family functioning have been examined for their relationships with student engagement.

Family management practices of routine, parental expectations for achievement, monitoring, and cohesion each impact student engagement in diverse ways (Annunziata, Hogue, Faw, & Liddle, 2006; Taylor & Lopez, 2005). Taylor and Lopez considered how family routine and parental expectations for achievement impacted student engagement criteria of attention, attendance, and sense of challenge of African American youth. Findings suggest that family routine is positively related to all three measured components of student engagement ($p < .01$, $.05$, $.01$, respectively), and parental expectation is positively associated with school attendance ($p < .01$). In another study, when cohesive families (i.e., close, communicative, supportive, organized) provided high or moderate levels of monitoring, adolescents showed more student engagement (i.e., bonding to teachers and orientation to school; Annunziata et al., 2006). However, when monitoring was low, family cohesion had a neutral or even negative impact on student engagement. Results indicate that family management practices may be protective factors against disengagement in school but that influences may not always be additive.

Regarding family relationships, studies have considered how social support—in particular, parental support—can also impact student engagement. In one study, urban adolescents perceived social support from family members was related to greater student engagement (academic and behavioral), whereas perceived barriers—including family and social barriers—was associated with less student engagement and career development (Kenny, Blustein, Chaves, Grossman, & Gallagher, 2003). In other research, positive parent–adolescent relationships were significantly related to higher levels of student engagement (psychological and behavioral) among middle-class African American adolescents (Sirin & Rogers-Sirin, 2004). Based on results of their study with African American youth, Connell, Spencer, and Aber (1994) suggested that it is the transactional relationship between parental involvement and disaffected behavior that perpetuates negative educational outcomes. Brewster and Bowen (2004) examined Latino high school students' perceived school meaningfulness and problem behavior in school beyond the effects of parental support and found that level of parental support significantly impacted perception of school meaningfulness even after controlling for teacher support.

An examination of extant literature indicates that family assets have a direct relationship to student engagement. Adolescents who have family relationships that are negative may be at risk for poorer student engagement, whereas those with especially positive family relationships may be more likely to have healthier engagement. When considering the role of family relationships as a risk or asset related to student engagement, it is also important to consider that positive family relationships have an indirect effect on student engagement via internal traits and competencies. For example, Bohnert, Martin, and Garber (2007) examined a model of school activity involvement and found that familial relationship quality not only had a direct effect on school involvement, but also indirectly

affected involvement through adolescent perceptions of self-worth and perceived competence. In light of this important relationship, we consider the role of internal assets as a possible mediator between school assets and student engagement for at-risk and low-risk youth.

INTERNAL ASSETS

Research has suggested that numerous internal factors are related to student engagement. Connell and colleagues (1994) examined a model of educational outcomes, which proposed that perceived parental support shaped individuals' beliefs about themselves and that these beliefs related to engagement in school. The specific self-factors examined were appraisals of efficacy in school, general self-esteem, and perceived quality of relationships with others. Self-factors were positively correlated with emotional and behavioral engagement in school. Although parental support was directly related to self-factors and student engagement, results indicated that self-factors influenced student engagement beyond the influence of parental support. These results highlight the importance of both external influences, such as family support, as well as internal characteristics, such as sense of control and self-worth.

Additional research has found significant relationships between self-variables and student engagement. Caraway, Tucker, Reinke, and Hall (2003) examined self-variables as predictors of student engagement for a sample of high school students. Results indicate that self-variables of generalized self-efficacy and goal orientation are both significantly positively correlated with student engagement (behavioral, affective, and cognitive). However, Caraway and colleagues concluded that future research should consider other variables that may relate to student engagement because factors of self-efficacy, goal orientation, and fear of failure only accounted for a modest portion of the variance ($R^2 = 0.29$). Other studies have found that student engagement is significantly positively correlated with academic self-concept (Seaton & Taylor, 2003) and higher levels of career planning and expectations (Kenny, Blustein, Haase, Jackson, & Perry, 2006), and was significantly negatively correlated with low expectations for success and low self-esteem (Jessor, Turbin, & Costa, 1998). Taken together, these results demonstrate that students come to school with internal traits that are associated with their level of engagement in school, which highlights the importance of considering self-variables in a model to understand factors related to student engagement. The question is whether school-based assets relate to student engagement when family factors and internal resilience are taken into consideration.

SOCIAL SUPPORT AND SCHOOL ASSETS

Studies have found direct relations among various school assets and enhanced educational outcomes. For example, participation in organized activities after school is associated with better educational outcomes (Cooper, Valentine, Nye, & Lindsay, 1999) and lower rates of school dropout (Mahoney & Cairns, 1997). Tucker and colleagues (2002) found that teacher involvement had a direct influence on student engagement even when controlling for perceived competency and autonomy. Another study found that healthy classroom relationships characterized by teacher and peer support as well as mutual respect enhanced internal feelings of mastery and efficacy, which facilitated academic engagement (Patrick, Ryan, & Kaplan, 2007). Sirin and Rogers-Sirin (2005) found school participation and school expectations were associated with academic performance beyond the influence of gender, cognitive functioning, and mother's education. This research highlights the importance of relationships with teachers, participation in activities, school expectations, and mutual respect in relation to student engagement.

Additional research has investigated the role of social support on student engagement. Supportive relationships with adults from school, home, or neighborhood environments have been found to mediate the negative influence of a number of risk factors on student engagement (psychological

and behavioral; Woolley & Bowen, 2007). Using a nationally representative sample, You (2005) investigated factors related to adolescents' academic engagement both in initial status and in rate of growth, and found the following significant factors: students' locus of control and self-esteem, peer academic value, parent educational expectation, parent-child communication, teachers' support, and students' perceived school safety. Similarly, Wettersten and colleagues (2005) found that social support was predictive of student engagement of high school students in a rural setting. These studies highlight the importance of considering influences of self-factors and social support when investigating student engagement.

In the first prospective study to examine the effects of teacher relationship quality on student engagement and achievement, Hughes and Kwok (2007) found that teacher-parent and teacher-student relationships each significantly impact measured outcomes for students of diverse ethnic backgrounds when controlling for socioeconomic status. Brewster and Bowen (2004) found that both teacher support and parental influence significantly contributed to students' engagement. Considering the effects of parent, peer, and teacher support on middle school youth with a sample of middle-class European American middle school students, Wentzel (1998) found an additive effect; that is, each personal connection had independent effects on outcomes. Family cohesion was significantly related to school interest and goal orientations, whereas parent support was associated with students' academic goal orientations. Teacher support was related to interest in class and pursuit of goals. These findings lead to the hypothesis that teachers and parents provide unique contributions to their children's level of student engagement.

Although evidence exists for unique and important relations between various school assets and student engagement, research has not examined the complex interrelations between family relationships, internal resilience, and school assets. Evidence of a model that describes the relations of school assets and student engagement when considering internal assets for students with at-risk, average, and low-risk levels of family assets would help indicate to schools that their supports and services may help overcome risk factors in students' lives that are otherwise difficult to alter within the school setting.

MEASUREMENT NEEDS

Research on youth resilience and school assets as protective factors against negative health and educational outcomes has been limited by a lack of psychometrically sound instruments to reliably and validly measure the characteristics theorized to contribute to resiliency (Jimerson, Sharkey, Nyborg, & Furlong, 2004; Libbey, 2004). The ability to appropriately measure resiliency would contribute to a deeper understanding of its potential protective quality for students who face adverse contexts. Large sample databases have the potential to provide the critical data needed to examine adolescent outcomes to address science-based questions. With sufficiently large samples, such surveys draw on diverse populations and, thus, have the potential to allow educators, researchers, and policy makers to investigate relations among health and risk factors for numerous important subgroups of youth.

Even while there is increased interest in the roles that resilience and positive school-social connections have in promoting positive youth development (Blum & Libbey, 2004), the only large-scale school-based survey that has systematically included a resilience measure is the California Healthy Kids Survey (CHKS; <http://www.wested.org/hks>). Thus, the CHKS is ideal for examining relations among various social supports, individual resilience, and student engagement for the most diverse population of students in the United States. However, the use of the CHKS and other well-respected large-scale databases needs to be enhanced through research examining the measures' psychometric properties and the latent constructs it was designed to measure (Furlong & Sharkey, 2006). Currently, psychometric characteristics of the CHKS are not reported in detail and

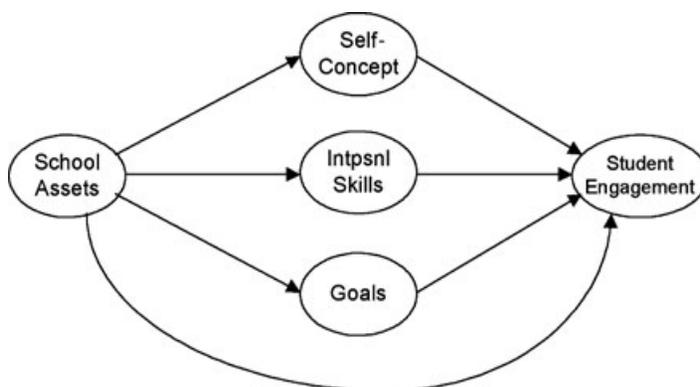


FIGURE 1. Final structural model (Intpsnl Skills = interpersonal skills, Goals = goals and aspirations).

analyses do not generally engage in more complex examinations of patterns of behavior to inform research. Researchers must first examine the measurement utility of the CHKS before expanding its use beyond that of an epidemiologic tool that primarily informs local community interests to an empirically validated instrument that can answer theoretical questions.

PURPOSE AND HYPOTHESES

This study examines a theoretically informed model of the relations among school assets, individual resilience, and student engagement for groups of youths based on levels of family assets. The CHKS was selected to examine the proposed model given its inclusion of the Resiliency Youth Development Module (RYDM). The RYDM was derived from a detailed review of the risk and resilience literature, which shows that resilience protects against involvement in health risk behaviors such as alcohol, tobacco, and other drug abuse, and promotes successful learning (e.g., Garmezy, 1993; Hanson & Austin, 2002; Jimerson, Sharkey, Furlong, & O'Brien, 2004; Kirby & Fraser, 1997; Tran & Furlong, 2004). Although the RYDM was ideally suited for measuring the proposed model, its psychometric properties needed to be established. Thus, the first step of the study was to examine and validate the factor structure of the RYDM. It was hypothesized that a factor structure derived through theoretical means would be confirmed using empirical data. Therefore, the factor structure of internal resiliency was explored using factor analyses.

The second step of the study was to examine the proposed model for different groups of participants. We hypothesized that our model, pictured in Figure 1, would be a good fit with the data. Specifically, given literature to support the relationship between school assets and student engagement, we hypothesized that internal assets would not fully mediate the relationship between school assets and student engagement. Furthermore, given the idea of school-based assets as protective factors in the risk and resilience literature, we hypothesized that the relation of school assets to student engagement would be strongest for the group of youths selected for below average levels of family assets. That is, we believe that school assets would (a) be a protective factor for youths with low family assets and (b) have weak relations with student engagement for youth with high family assets.

METHODS

Participants

We randomly selected 20,000 students from a group of more than 300,000 to form calibration and validation samples (i.e., 10,000 for each sample). Table 1 displays the demographic

Table 1
Demographic Characteristics of Sample

	Calibration sample (<i>N</i> = 10,000)	Validation sample (<i>N</i> = 10,000)		
		Whole	Strength ^a	Risk ^b
<i>Grade</i>				
7th	3,920(39%)	4,066(41%)	323(46%)	195(26%)
9th	3,076(31%)	3,096(31%)	216(31%)	259(35%)
11th	2,758(27%)	2,488(25%)	153(22%)	259(35%)
<i>Gender</i>				
Male	4,393(44%)	4,453(45%)	333(47%)	336(46%)
Female	5,569(56%)	5,389(54%)	371(52%)	392(53%)
<i>Ethnicity</i>				
European American	2,998(30%)	2,259(23%)	195(28%)	153(21%)
Latino American	3,470(34%)	3,516(36%)	191(27%)	264(36%)
Asian American	928(9%)	923(9%)	48(7%)	88(12%)
African American	445(4%)	473(5%)	28(4%)	25(3%)
Native American	186(2%)	118(1%)	11(2%)	16(2%)
Mixed and others	1,973(21%)	2,711(26%)	350(32%)	260(26%)

^a*N* = 823, ^b*N* = 806.

Note. Nonresponse data are apparent in grade-level percentages. Percentages of ethnicity add up to more than 100% because youth could select multiple categories.

characteristics of each sample. No significant differences were found between calibration and validation groups as a whole. However, differences were found between the Strength and Risk groups used to test the model. Students in the Risk group were older on average. In addition, fewer European American and African American youths and more Latino American, Asian American, and Native American youths were in the Risk group compared to the Strength group.

The California Healthy Kids Survey

The CHKS was designed in the late 1990s to measure health risk and resilience information that is provided to schools, districts, and communities as part of the No Child Left Behind Act. It is a set of assessment modules developed by WestEd's Health and Human Development Program in collaboration with Duerr Evaluation Resources for the California Department of Education (CDE). The CHKS is administered in all California schools to collect information about youth health and risk behaviors with goals to assess student needs, justify program funding, guide program development, and monitor progress in achieving program goals (WestEd, 2006). The CHKS survey provides some of the richest data available from one of the most diverse school-age populations in the world.

The RYDM was developed as an integral component of the CDE Safe and Healthy Kids Program Office's asset development initiative. The CHKS emphasizes that it is equally important to assess the strengths and positive health behaviors and characteristics exhibited by youth and their risk and problem behaviors. In the RYDM, resilience is theorized to be an innate capacity for healthy development and successful learning (Benard, 2004). The conceptual model that drives this instrument postulates that external assets help meet youths' basic developmental needs, which in turn promote the development of internal assets; these then contribute to healthy social and academic competence/outcomes. Given this conceptual model, the RYDM was developed to measure both external and internal assets.

School and Family Assets. The RYDM measures external assets in the four main domains of an adolescent's life: school, family, community, and peer group. The school- and family-based external assets scales each contain nine items (e.g., "At my school, there is a teacher or some other adult who really cares about me" or "In my home, there is a parent or some other adult who believes I will be a success") with Likert response options anchored by 1 = *not at all true* and 4 = *very much true*.

Internal Resiliency. The Internal Resiliency subscale of the RYDM contains 18 items (e.g., "There are many things that I do well") with Likert response options anchored by 1 = *not at all true* and 4 = *very much true*. WestEd field-tested these items and identified a six-factor structure: Cooperation, Empathy, Problem Solving, Self Efficacy, Self-Awareness, and Goals and Aspirations. The factor structure was tested in this study with an alternative outcome. Data from spring 2001, for grades 7, 9, and 11 ($n = 60,000$), suggest that the Internal Resiliency and External Assets scales had high internal consistency (Cronbach's alpha = 0.94 and 0.92, respectively), and alphas for the 17 asset scales ranged from 0.59 to 0.90.

Student Engagement. The School Connectedness Scale included in the CHKS is a five-item scale constructed from items originally in the National Longitudinal Study of Adolescent Health (McNeely, Nonnemaker, & Blum, 2002). This subscale is designed to measure the bond the student feels toward school and, as such, measures only psychological and not academic, behavioral, or cognitive engagement. Items (e.g., "I am happy to be at this school," "I feel close to the people at this school") have Likert response options anchored by 1 = *strongly disagree* and 5 = *strongly agree*. The scale has a reported internal consistency reliability of 0.79 (McNeely et al., 2002).

Procedures

The CHKS was administered to students in grades 7, 9, and 11 in comprehensive schools during the 2005–2006 school year. The RYDM was administered to all students attending school in districts that opted to include the entire module. Administration of the school and community asset scales of the RYDM is required by CDE, whereas the rest of the module is optional. Student participation is voluntary, and responses are anonymous. Positive consent procedures were conducted to gain parent permission for student participation.

Analysis

To test the hypotheses in the present study, analyses were conducted in two stages. First, we used exploratory factor analysis (EFA) to explore the factor structure of *Internal Assets* with the calibration sample and confirmatory factor analysis (CFA) to cross-validate the results with the validation sample. Second, we proceeded to assess the hypothesized structural relationships among latent variables across three groups. Structural equation modeling (SEM) was chosen because it provides a causal model in which the relationships among latent variables can be tested simultaneously without having to run multiple analyses. This enabled us to study both indirect and direct effects on outcome variables of interest. SEM can (a) account for measurement error with the inclusion of latent variables and (b) analyze how variables within the hypothesized modeled (portrayed in Figure 1) may relate to one another. All analyses were conducted using AMOS 4.0 (Arbuckle, 1999) based on full information maximum likelihood estimation (Arbuckle, 1996).

This study used the following criteria to assess model fit: one absolute model fit criteria (root-mean-square error of approximation [RMSEA; Steiger & Lind, 1980]), and two relative model fit criteria (nonnormed fit index [NNFI; Bentler & Bonett, 1980] and comparative fit index [CFI; Bentler, 1990]). On the basis of their simulation study, Hu and Bentler (1999) defined a "good fit" as an RMSEA value less than or equal to 0.05 and NNFI and CFI values equal to or greater than 0.95.

RESULTS

A preliminary descriptive analysis was conducted. Means, standard deviations, and ranges among study variables were computed separately for the Whole group, Family Strength group, and Family Risk group (Table 2). Several points are notable. Members of the Family Strength group reported higher scores on all variables compared to the Whole and Family Risk groups. The Family Risk group reported lower scores on all variables compared to the Whole and Family Strength groups. These apparent group mean differences in all variables suggest that the Family Assets Scale is valid to select risk and strength groups.

Table 2
Study Variables' Means, Standard Deviations, and Ranges

Variables	Whole Group	Family Strength	Family Risk
	Mean (SD)	Mean (SD)	Mean (SD)
<i>School Connectedness (1 = not at all true, 4 = very much true)</i>			
1. I feel close to the people at this school.	3.40(1.12)	3.75(1.14)	3.01(1.22)
2. I am happy to be at this school.	3.41(1.26)	3.78(1.19)	2.85(1.19)
3. I feel like I am part of this school.	3.24(1.15)	3.73(1.16)	2.65(1.17)
4. Teachers treat students fairly.	3.22(1.15)	3.56(1.24)	2.73(1.15)
5. I feel safe in my school.	3.32(1.05)	3.66(1.15)	2.82(1.04)
<i>School Assets (1 = strongly disagree, 5 = strongly agree)</i>			
At my school there is a teacher or adult who . . .			
6. really cares about me.	2.60(1.01)	3.02(1.01)	2.08(0.97)
7. tells me when I do a good job.	2.89(0.96)	3.32(0.92)	2.27(0.98)
8. notices when I'm not there.	2.72(1.03)	3.14(1.01)	2.24(1.03)
9. wants me to do my best.	3.05(0.97)	3.43(0.89)	2.46(1.05)
10. listens to me when I have something to say.	2.84(0.99)	3.31(0.93)	2.21(0.99)
11. believes I will be a success.	2.88(1.01)	3.40(0.89)	2.21(1.02)
<i>Internal Assets (1 = not at all true, 4 = very much true)</i>			
12. I have goals and plans for the future.	3.49(0.81)	3.81(0.54)	2.97(1.03)
13. I plan to graduate from high school.	3.78(0.82)	3.93(0.34)	3.44(0.92)
14. I plan to go to college after high school.	3.61(0.77)	3.86(0.49)	3.13(1.04)
15. I know where to go for help with a problem.	3.22(0.97)	3.78(0.61)	2.35(1.08)
16. I try to work out problems by talking/writing about them.	2.82(1.12)	3.48(0.93)	2.20(1.12)
17. I can work out my problems.	3.12(0.91)	3.65(0.70)	2.43(1.00)
18. I can do most things if I try.	3.39(0.79)	3.81(0.52)	2.77(0.98)
19. I can work with someone whose has different opinions than mine.	3.12(0.92)	3.64(0.70)	2.42(1.01)
20. There are many things that I do well.	3.31(0.84)	3.78(0.55)	2.59(1.00)
21. I feel bad when someone gets their feelings hurt.	3.23(0.93)	3.68(0.70)	2.70(1.09)
22. I try to understand what other people go through.	3.23(0.92)	3.69(0.68)	2.71(1.09)
23. When I need help I find someone to talk with.	2.95(1.06)	3.66(0.72)	2.23(1.09)
24. I enjoy working together with other students my age.	3.16(0.94)	3.71(0.67)	2.49(1.06)
25. I stand up for myself without putting others down.	3.04(0.96)	3.62(0.77)	2.48(1.04)
26. I try to understand how other people feel and think.	3.14(0.95)	3.70(0.70)	2.57(1.08)
27. There is a purpose to my life.	3.39(0.91)	3.86(0.49)	2.58(1.14)
28. I understand my moods and feelings.	3.17(0.94)	3.73(0.64)	2.53(1.08)
29. I understand why I do what I do.	3.19(0.95)	3.74(0.66)	2.55(1.09)

Note. Whole group, $N = 10,000$; Family Strength group, $N = 823$; Family Risk group, $N = 806$.

Normality of Variables

Another preliminary step in the analysis investigated whether data met the normality assumption. Because maximum likelihood estimation can produce distorted results when the assumption is severely violated (West, Finch, & Curran, 1995), the normality of each variable was investigated in terms of its kurtosis and skewness. According to the guideline of severe nonnormality (i.e., skew > 3 ; kurtosis > 10) proposed by Curran, West, and Finch (1997), the normality assumption of the variables was met except for one variable (for item 13, skew = 3.44 and kurtosis = 12.52). Therefore, this item was dropped from the current analyses.

Step One: Factor Analysis

First, EFA was employed to explore the underlying structure of a relatively large set of variables. Before conducting EFA, a content analysis of highly correlated items was carried out to avoid multicollinearity. Intercorrelations among variables were small to medium; thus, none were dropped. A principal axis factoring extraction method was used with a Direct Oblimin rotation. Oblique rotation was used because dimensions of Internal Assets were assumed to be correlated with one another. Several criteria were used to decide on the number of factors to be extracted. Empirical approaches, such as a scree test and pattern of factor loading, were considered within a theoretical framework to confirm that it is interpretable and substantively plausible. The three-factor model emerged as the most meaningful and parsimonious model using both substantive and statistical criteria. The three dimensions of Internal Assets scales were labeled as Self-Concept, Interpersonal Skills, and Goals and Aspirations. Items with factor loadings of < 0.40 on each factor were dropped, so 16 out of 17 items were finally selected (item 19 was dropped).

After conducting EFA, CFA was conducted to test the fit of the proposed factor structure (e.g., number of factors, loadings of variables on factors) from EFA results to the data (Table 3). The three-factor model fit the data well in terms of CFI (0.985), NNFI (0.981), and RMSEA (0.037). Standardized factor loadings for the three-factor model are provided in Table 3. Results showed that the standardized factor loadings of each construct are substantively large (> 0.63), suggesting all factors are well determined with valid indicators. Additional analyses were conducted to establish reliability and validity. Cronbach's alpha was calculated to check the internal reliability of the Internal Assets scales. Cronbach's alphas for the three factors (i.e., Self-Concept, Interpersonal Skills, Goals and Aspirations) were 0.87, 0.87, and 0.79, respectively, showing that Internal Assets scales are highly reliable for the current sample in this study. The correlation pattern of the three factors was examined to check validity. Intercorrelations among three factors were not too high (range, 0.62–0.81), which suggests discriminant validity of Internal Assets scales.

Step Two: Multigroup Structural Analyses

To assess the plausibility of the hypothesis that the relationship between school assets and student engagement is mediated by students' internal assets for all three groups (Whole, Family Strength, and Family Risk), we tested the two mediational models across three groups. The initial structural model reflecting full mediation was specified with indirect paths from school assets to student engagement via three dimensions of internal assets. The second structural model represented the partial mediational model, which included an additional parameter of direct effect of school assets to student engagement on the initial model. Fit indices for two mediational models across three groups are presented in Table 4. Results indicated that the partial mediational model was a better fit in terms of three fit indices with the sample data compared to the full mediational model across all three groups. Because the full mediational model is nested within the partial mediational model, a chi-square difference test was also performed. The chi-square values were significantly

Table 3
Standardized Factor Loadings for Three-Factor Model for Internal Assets

Items	Factor loadings
<i>Self-Concept</i>	
1. I know where to go for help with a problem.	0.678 ^b
2. I can work out my problems.	0.689 ^a
3. I can do most things if I try.	0.752 ^a
4. There are many things that I do well.	0.733 ^a
5. There is a purpose to my life.	0.730 ^a
6. I understand my moods and feelings.	0.713 ^a
7. I understand why I do what I do.	0.691 ^a
<i>Interpersonal Skills</i>	
8. I try to work out problems by talking or writing about them.	0.636 ^b
9. I feel bad when someone gets their feelings hurt.	0.751 ^a
10. I try to understand what other people go through.	0.795 ^a
11. When I need help I find someone to talk with.	0.699 ^a
12. I enjoy working together with other students my age.	0.644 ^a
13. I stand up for myself without putting others down.	0.667 ^a
14. I try to understand how other people feel and think.	0.803 ^a
<i>Goals and Aspirations</i>	
15. I have goals and plans for the future.	0.738 ^b
16. I plan to go to college or some other school after high school.	0.785 ^a

^aThe estimate is statistically significant at $\alpha = 0.05$.

^bNot tested.

Table 4
Summary of Data Model Fit Statistics

Model	χ^2	df	CFI	NNFI	RMSEA
<i>Model 1: Full mediation model</i>					
Whole	10,922.196	344	0.982	0.978	0.055
Family Strength	2,412.187	344	0.976	0.971	0.086
Family Risk	1,690.248	344	0.974	0.970	0.070
<i>Model 2: Partial mediation model</i>					
Whole	10,247.397	343	0.983	0.980	0.054
Family Strength	2,308.652	343	0.977	0.973	0.083
Family Risk	1,626.704	343	0.975	0.971	0.068

Note. CFI = comparative fit index; NNFI = nonnormed fit index; RMSEA = root-mean-square error of approximation.

decreased with 1 degree of freedom for all three groups; thus, we chose the partial mediational model as the final theoretical model. The fit of the final model was deemed acceptable across three groups in terms of three fit indices.

The standardized parameter estimates for this model are presented in Table 5. Results demonstrated differential structural relations among latent variables across groups. Direct effects of school assets on student engagement are significant across all groups, but the effects were differential. The mediating patterns of three dimensions of internal assets were also differential across groups.

Table 5
Standardized Estimates of the Final Theoretical Structural Equation Model

Parameter	Whole	Family Strength	Family Risk
School Assets → Student Engagement	0.406***	0.410***	0.387***
School Assets → Self-Concept (whole strength, strength risk)	0.557***	0.402***	0.491***
School Assets → Interpersonal Skills (whole strength, strength risk)	0.537***	0.396***	0.497***
School Assets → Goals and Aspirations (whole strength, whole risk, strength risk)	0.435***	0.285***	0.440***
Self-Concept → Student Engagement	0.104***	0.033	0.111*
Interpersonal Skills → Student Engagement	0.102***	0.130**	0.072
Goals and Aspirations → Student Engagement	0.027	-0.088*	0.044

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

Specifically, the mediating effect of self-concept between school assets and student engagement was supported for Whole and Family Risk groups. The mediating effect of interpersonal skills between school assets and student engagement was supported for Whole and Family Strength groups. The mediating effect of goals and aspirations between school assets and student engagement was supported only for the Family Strength group.

To test whether each effect is statistically different across groups, we conducted multigroup SEM. First, we analyzed the data for all three groups simultaneously using the final theoretical model (here, partial mediation model); this multigroup model serves as the baseline model against which the subsequent model is compared. Results from the testing of this model for all three groups revealed a well-fitting model: $\chi^2_{(1029)} = 14,184.947$, CFI = 0.982, NNFI = 0.978, and RMSEA = 0.033. It should be noted that the 1,029 *df* for this multigroup model represents the summed *df* associated with the final baseline model for all three groups (343 *df* for each group).

In testing for possible group differences on structural paths, the measurement model for each construct should operate equivalently across different groups so that differences on the structural paths can be meaningfully comparable across groups (Steenkamp & Baumgartner, 1998). This is called metric invariance, which is a prerequisite for multigroup SEM. Therefore, we constrained the measurement model for equal corresponding loadings across groups. Equality constraints on factor loadings increased χ^2 value as 15,632.826, while gaining 52 degrees of freedom. The chi-square difference was significant, implying that the metric invariance was not supported. However, the chi-square difference test has the same well-known problem as the chi-square test for overall model fit evaluation; therefore, we also considered the fit indices. Results from the testing of metric invariance model revealed a well-fitting model in terms of CFI = 0.980, NNFI = 0.977, and RMSEA = 0.034. Because the metric invariance did not deteriorate the model in terms of three fit indices, the metric invariance was valid.

Given that the metric invariance was met, *t*-tests (available critical ratio test in AMOS) were conducted to pinpoint which paths are significantly different across groups. Table 5 provided the results from the *t*-tests. Two groups in the parentheses show the significant difference on the corresponding structural coefficient. Specifically, there were significant differences on the direct effect of school assets on the three dimensions of internal assets across three groups. On the paths from school assets to self-concept and interpersonal skills, there were significant differences between the Whole group and Family Strength group, indicating that the effects of school assets on

two internal asset subdimensions are stronger for the Whole group than for Family Strength group. On the path from school assets to goals and aspirations, there were significant differences between all three groups, indicating that the effect of school assets on goals and aspirations is stronger for Family Risk group than for the other two groups.

DISCUSSION

The primary goal of this study was to determine if school-based assets promote student engagement beyond individual and family influences. Results highlighted the important role schools may play in fostering student engagement. Consistent with previous studies, results found that youth who reported lower levels of family assets also reported lower levels of student engagement, suggesting that lack of family assets is a risk factor for low student engagement. Also consistent with extant literature, school assets were related to student engagement. Contrary to hypothesis, school assets did not have a differential impact on student engagement for the Family Risk group youth (i.e., low family assets) compared to their high family asset peers. Thus, school assets are not merely protective factors, but also important assets, or promotive factors. This result is meaningful in that it shows the importance of school assets for all students, not just those students who are at risk. This result is consistent with research conducted by Wentzel (1998), who found that teachers and parents have independent roles in promoting student functioning that are additive not compensatory. Through adolescent perceptions of caring teacher relationships, results indicate that educators' efforts to establish relationships with their students are related to psychological feelings of engagement for students from diverse backgrounds.

Further elucidation regarding relations among school assets, internal resilience, and student engagement was found. Direct relations between School Assets and Internal Resilience factors were significant for all groups, but stronger for the Family Risk group than the Family Strength group. This suggests that school assets may have more of an impact on internal resilience for youth with low family assets. Furthermore, as hypothesized, internal assets did not fully mediate the relationship between school assets and student engagement for any group. Of interest are unexpected findings that the mediational role of internal resilience was different across groups. When the Whole group was examined, self-concept and interpersonal skills were partial mediators between school assets and student engagement. When youths were grouped by family assets, Self-Concept was a partial mediator for the Family Risk group, whereas Interpersonal Skills was a partial mediator for the Family Strength group. The relations between Goals and Aspirations and Student Engagement were in the opposite direction than expected (-0.088), and although statistically significant, indicated a negligible relationship. These relations are tentative and should be examined further to determine whether they have implications for intervention.

This study contributed a significant finding beyond model implications. An empirical validation of the RYDM found a psychometrically sound, parsimonious measure of internal resilience. Factor analyses using a sample of a diverse group of adolescents suggest that a three-factor structure (i.e., Self-Concept, Interpersonal Skills, Goals and Aspirations) best fits the internal resilience of RYDM. In the absence of another suitable measure of internal resilience, psychometric validation was useful for completion of this study. Moreover, this examination provides a foundation for future research with the RYDM. This finding has theoretical and empirical implications that should be explored in future research regarding internal resilience characteristics.

Limitations and Future Directions

Despite strengths of the study, including access to a large, diverse sample and the use of SEM to examine complex relations among items, there are limitations that should be noted and addressed

in future research. The study was cross-sectional in nature rather than longitudinal. Thus, causal impacts of family assets, school assets, and internal resilience cannot be understood. Future research should examine these factors at multiple time points to determine more conclusively if school assets have a turning point effect for at-risk youth. In addition, although participants were a random sample of an incredibly diverse population estimate of California, data can only be generalized to youth in California. Future studies should apply this model to groups of youth in other regions of the nation and internationally. Finally, this study was limited by self-report measurement that did not allow for cross-informant perspectives or school-level data. Future research should include multiple measures of latent variables from multiple perspectives and access school-level data such as ethnic composition, size, and rural versus urban setting.

Although the sample was diverse in terms of age, gender, and ethnicity, participant characteristics may have an impact on model fit. Next steps include studies to understand whether the model holds true for different groups of youth. For example, some research has shown that developmental pathways may be different for boys and girls, and thus, protective factors and associated turning points would likely be different. In one study, girls reported higher relatedness to parents, teachers, and peers than boys, but feelings of relatedness to teachers was a stronger predictor of student engagement for boys (Furrer & Skinner, 2003). Research and interventions aimed at understanding and promoting student engagement should be evaluated for impacts of age, gender, and ethnicity given developmental, social, and cultural differences between groups.

Conclusion

Schools have a difficult job to engage students who come from diverse backgrounds, including families with varying levels of involvement and support. Educators understandably grow frustrated that family and background risk factors seem insurmountable. This study provides evidence that school assets such as caring teacher relationships do relate to student engagement, giving hope to school professionals that their efforts to build relationships with their students are successful. It is important to continue to strive toward understanding what alterable factors in the school environment can positively influence student engagement to promote positive development and avoid negative outcomes all too common for youth, such as drugs, dropout, and delinquency. As results suggest, educators cannot assume that interventions aimed at building internal resilience, such as goals and aspirations, are helpful to engage students. Alternative individual interventions may be necessary, depending on level of family risk. Nonetheless, building relationships with youths is something teachers can do with confidence to increase the likelihood of student engagement for all children, regardless of family risk, gender, or ethnic background.

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